

Appl. No.: 10/798,164
Amendment Dated: April 30, 2007
Reply to Office Action of November 29, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Canceled)**
2. **(Previously Presented)** The surfactant composition of claim 51, characterized in that the surfactant composition comprises
 - (A) 5 to 60 wt%, referring to components (A) and (B), of one or more gemini surfactant(s) and,
 - (B) referring to the remainder 95 to 40 wt.%, based on the total of components (A) and (B), of said co-amphiphile(s).
3. **(Previously Presented)** The surfactant composition according to any of claims 2 or 51, further comprising
 - (C) at least 0.1 wt% water, referring to the total composition.
4. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51, further comprising
 - (D) at least 0.1 wt% of one or more oil component(s), referring to the total composition.

Appl. No.: 10/798,164
Amendment Dated: April 30, 2007
Reply to Office Action of November 29, 2006

5. **(Canceled)**
6. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51 in the form of an emulsion, characterized in that the co-amphiphiles are present in solid form at 25°C.
7. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51 in the form of a dispersion, characterized in that the co-amphiphiles are present in liquid form at 25°C.
8. **(Canceled)**
9. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51, wherein the two co-amphiphiles are
 - a C₆- to C₄₀- alcohol, and
 - a mono-, di-, and triglyceride of C₆- to C₂₂-carboxylic acid.
10. **(Previously Presented)** A surfactant composition according to claim 9, characterized in that the surfactant composition comprises
 - 30 to 50 wt% of C₆- to C₄₀- alcohol, and

Appl. No.: 10/798,164
Amendment Dated: April 30, 2007
Reply to Office Action of November 29, 2006

- 30 to 50 wt% of a mono-, di-, and triglyceride of a C₆- to C₂₂-carboxylic acid

each referring to the gemini surfactant/co-amphiphile(s) composition.

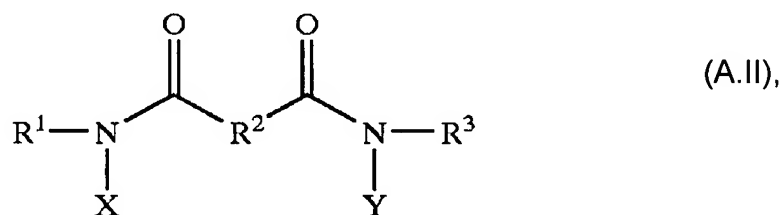
11. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51 in the form of an emulsion, characterized in that the surfactant composition can be produced by a method (phase transfer temperature (PTT) method), which includes at least the following step:
combining
 - (a) a composition (a) comprising the gemini surfactant (A) wherein the composition has a temperature X, with
 - (b) a composition (b) comprising the co-amphiphile (B) wherein the composition has a temperature Y,
the temperature Y being greater than temperature X.
12. **(Original)** The surfactant composition of claim 11, characterized in that the temperature Y is not more than 15°C higher than the critical phase transfer temperature of the surfactant in composition (b).
13. **(Original)** Surfactant compositions according to claim 12, characterized in that the temperatures X and Y are different by at least 3°C.

14-16. **(Canceled)**

17. **(Previously Presented)** A surfactant composition according to any of claims 2 or 51, characterized in that the surfactant composition comprises 0.01 to 30 wt% of the components (A) and (B), referring to the total composition.

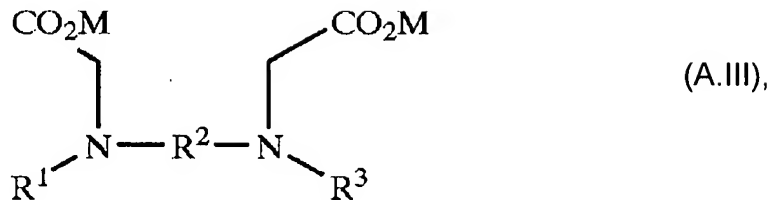
18. **(Canceled)**

19. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (A.II).



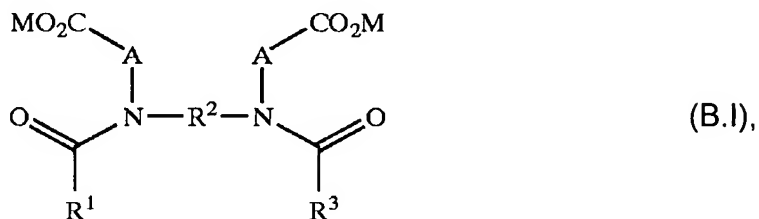
wherein the substituents have the meanings as defined by the general formula (A.I).

20. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (A.III).



wherein the substituents have the meanings as defined by the general formula (A.I).

21. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (B.1).

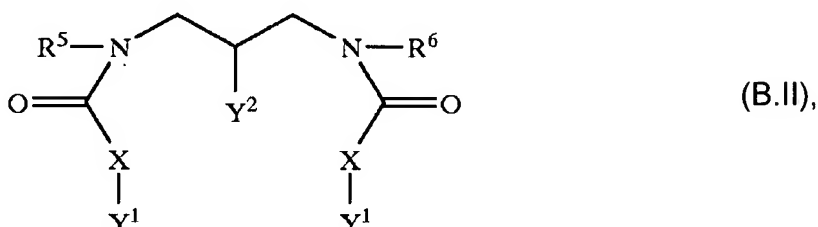


wherein the substituents have the following meanings:

- R^1, R^3 C_5 - to C_{25} -alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;
- R^2 C_1 [[,]]- to C_{12} -alkylene
- A CHR^4 , CH_2 , C_2H_4 , C_3H_6 , C_4H_8 ;
- R^4 aminocarboxylic acid radical, and

M alkali, (alkyl)ammonium, alkanol ammonium, H, or 1/2
alkaline earth.

22. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50,
characterized in that the gemini surfactant has the general formula (B.II).



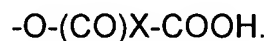
wherein the substituents have the meanings as defined by the general
formula (B.I), and

R⁵, R⁶ represent a C₆- to C₃₆-alkyl group that can be branched,
unbranched, saturated, or unsaturated as far as not adjacently
diunsaturated;

X is an alkylene- or alkenylene group having from 1 to 6 carbon
atoms, which may be substituted with a hydroxyl group or a sulfonic
acid group or a carboxyl group;

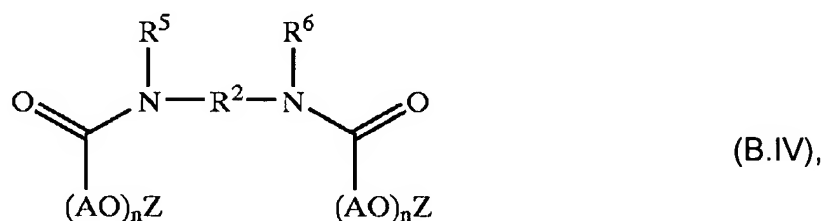
Y¹ is a sulfonate- or sulfate group or a
carboxyl group, and

Y² represents a hydroxyl group, a sulfuric acid residue, or



23. **(Canceled)**

24. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (B.IV).



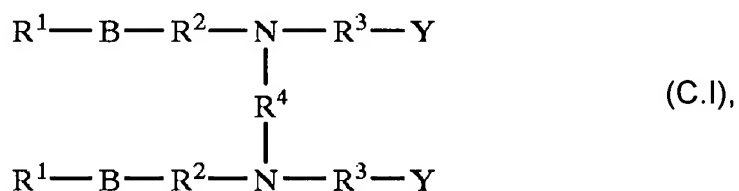
wherein the substituents have the meanings as

defined by the general formulas (B.1) and (B.11) and

AO represents alkylene oxide units wherein $n = 1$ to 20, and

Z is $-\text{SO}_3\text{M}$, $-\text{C}_2\text{H}_4\text{SO}_3\text{M}$, $-\text{C}_3\text{H}_6\text{SO}_3\text{M}$, $\text{P}(\text{O})(\text{OM})_2$, $-\text{CH}_2-\text{COOM}$, or $\text{C}_2\text{H}_4-\text{COOM}$.

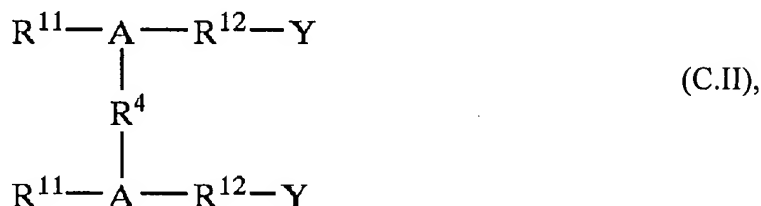
25. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.I).



wherein the substituents have the following meanings:

- R^1 C₅- to C₂₅-alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated, hydroxy-substituted or perfluorinated;
- R^2 C₁- to C₁₂-alkylene or hydroxy-substituted derivatives thereof;
- B an amide group, a carboxyl group, or a polyether group;
- R^5 C₁- to C₄-alkyl, hydroxy-substituted alkyl, or H;
- R^6 C₂- to C₄-alkylene;
- x a number from 1 to 20;
- R^3 C₁- to C₁₂-alkyl or hydroxy-substituted derivatives thereof, R^7 -D- R^7 , or a polyether group;
- R^7 C₁- to C₆- alkylene or hydroxy-substituted derivatives thereof;
- D -O-, -S-, -N(R^8)-;
- R^4 alkylene or alkylaryl having from 1 to 12 carbon atoms, the hydroxy-substituted derivatives, or R^9 -D¹- R^9 ;
- R^8 C₁- to C₁₂-alkyl or hydroxy-substituted alkyl, H, or R^9 -D¹- R^9 ;
- R^9 C₁- to C₆-alkylene, hydroxy-substituted derivatives thereof, or aryl;
- D¹ -O-, -S-, -SO₂-, -C(O)-, [-O(R^7 -O)x-], (R^{10})_t[N(R^{10})]_z, or aryl;
- R^{10} C₁- to C₁₂-alkyl, hydroxy-substituted alkyl, H, or aryl;
- t, z are independently a number from 1 to 4; and
- Y is independently -SO₃H, -O-SO₃H, -OP(O)(OH)₂, -P(O)(OH)₂, -COOH, -CO₂-C₆H₄-SO₃H, or the salts thereof.

26. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.II).

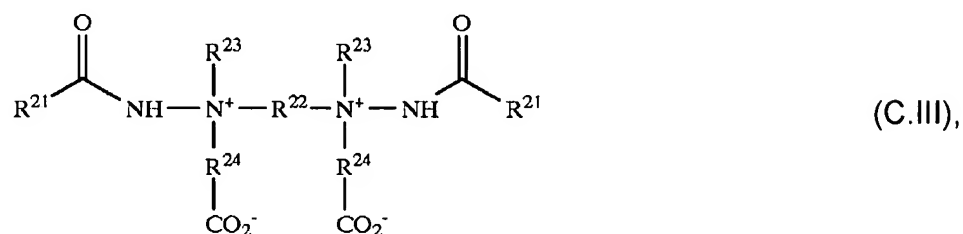


wherein the substituents have the meanings as

defined by the general formula (C.I), and

- R^{11} is a C_5 - to C_{23} -alkyl group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, hydroxy-substituted, or perfluorinated or R^{14} -B- R^2 ;
- R^{14} is a C_1 - to C_{12} -alkyl group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, or the hydroxy-substituted derivatives;
- R^{12} means a C_1 - to C_{12} -alkylene group that can be branched, unbranched, saturated, unsaturated as far as not adjacently diunsaturated, the hydroxy-substituted derivatives, or an amide group, a carboxyl group, a polyether group; and
- A is $-CR^6=$ or $-N=$, if whenever A is equal to $-N=$, R^{11} represents R^{14} -B- R^2 .

27. **(Withdrawn)** A surfactant composition according to any of claims 2 or 50, characterized in that the gemini surfactant has the general formula (C.III).



wherein the substituents have the meanings as defined by the general formulas (C.I) and (C.II) and

R^{21} represents a C^5 - to C^{23} -alkyl group that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^{22} , R^{24} are C_1 - to C_6 -alkylene;

R^{23} is methyl, ethyl, propyl, or a polyether group.

28-31. **(Canceled)**

32. **(Previously Presented)** The surfactant composition any of claims 2 or 51 wherein said one or more gemini surfactants are present in an amount of from 10 to 60 wt%.
33. **(Previously Presented)** The surfactant composition any of claims 2 or 51 wherein said one or more gemini surfactants are present in an amount of from 10 to 50 wt%.

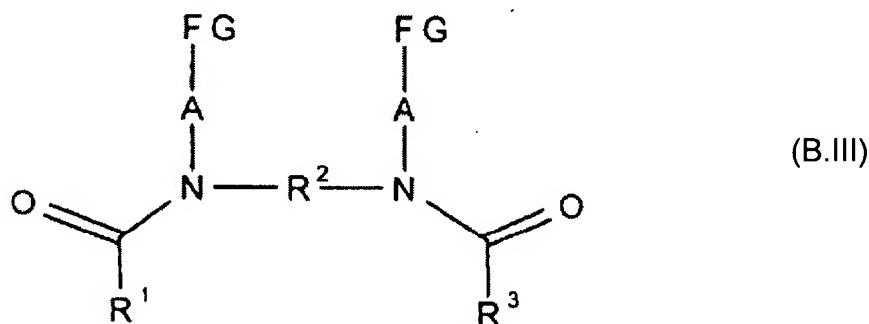
34. **(Previously Presented)** The surfactant composition any of claims 2 or 51 wherein said long chain alcohol is a C₈- to C₂₄- alcohol.
35. **(Previously Presented)** The surfactant composition of claims 2 or 51 wherein said carboxylic acid is a C₈- to C₂₂-carboxylic acid.
36. **(Previously Presented)** The surfactant composition of claims 2 or 51 wherein 3 to 5 different co-amphiphiles are employed.
37. **(Previously Presented)** The surfactant composition of claim 9 wherein said long chain alcohol is a C₈- to C₂₄-alcohol.
38. **(Previously Presented)** The surfactant composition of claim 10 wherein said long chain alcohol is a C₈- to C₂₄- alcohol.
39. **(Original)** The surfactant composition of claim 11 wherein said composition (a) contains water.
40. **(Original)** The surfactant composition of claim 11 wherein said composition (b) contains an oil component.
41. **(Previously Presented)** The surfactant composition of claim 13 wherein the temperatures X and Y are different by at least 5° C.
42. **(Original)** The surfactant composition of claim 17 wherein the surfactant composition comprises 0.1 to 6 wt% of the components (A) and (B), referring to the total composition.

43-50. (Canceled)

51. **(Previously Presented)** A surfactant composition comprising
- (A) 1 to 70 wt% referring to components (A) and (B), of one or more gemini surfactant(s) and,
- (B) referring to the remainder, based on the total of components (A) and (B), two or more co-amphiphile(s) having an HLB value of less than or equal to 6;

wherein

- at least one gemini surfactant has the general formula (B.III)



wherein the substituents have the following meaning

FG is $-\text{COOM}$ or $-\text{SO}_3\text{M}$;

R^1, R^3 is C_5 - to C_{25} -alkyl, that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^2 is C_1 - to C_{12} -alkylene;

A is CHR^4 , CH_2 , C_2H_4 , C_3H_6 , C_4H_8 ;

R^4 is aminocarboxylic acid radical; and

M is alkali, (alkyl)ammonium, alkanol ammonium, H, or $\frac{1}{2}$ alkaline earth;

and wherein

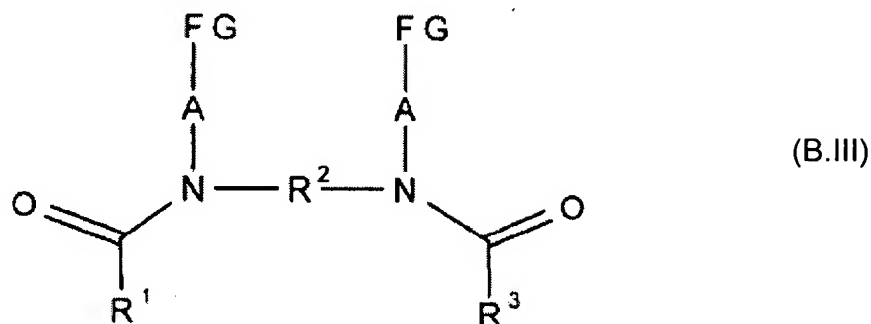
- the co-amphiphile(s) having an HLB value of less than or equal to 6 comprise a mixture of at least two different co-amphiphiles selected from at least two different groups (a) to (d):
 - (a) one long chain alcohol(s) being C₆- to C₄₀- alcohol(s);
 - (b) long chain acid(s) being C₆- to C₂₄- carboxylic acid(s);
 - (c) ester(s)/partial ester(s) of a polyol with one or more mono- or polycarboxylic acid(s) selected from the group consisting of:
 - a sorbitan (C₆- to C₂₂-) ester,
 - a methylglucoside (C₆- to C₂₂-) ester,
 - a sugar (C₆- to C₂₂-) ester,
 - a mono-, di-, and triglyceride of a C₆- to C₂₂- carboxylic acid,
 - a lactic acid or citric acid esterified derivative of a mono- or di-glyceride of a C₆- to C₂₂-carboxylic acid,
 - a polyglycerol (C₆- to C₂₂-) ester, and
 - a vitamin ester;
- and
- (d)
 - salicylic acid
 - benzoic acid
 - lecithin

52. **(New)** A surfactant composition comprising

- (A) 1 to 70 wt% referring to components (A) and (B), of one or more gemini surfactant(s) and,
- (B) referring to the remainder, based on the total of components (A) and (B), two or more co-amphiphile(s) having an HLB value of less than or equal to 6;

wherein

- at least one gemini surfactant has the general formula (B.III)



wherein the substituents have the following meaning

FG is $-\text{COOM}$ or $-\text{SO}_3\text{M}$;

R^1, R^3 is C_5 - to C_{25} -alkyl, that can be branched, unbranched, saturated, or unsaturated as far as not adjacently diunsaturated;

R^2 is C_1 - to C_{12} -alkylene;

A is CH_2 , C_2H_4 , C_3H_6 , C_4H_8 ; and

M is alkali, (alkyl)ammonium, alkanol ammonium, H, or $\frac{1}{2}$ alkaline earth;

and wherein

- the co-amphiphile(s) having an HLB value of less than or equal to 6 comprise a mixture of at least two different co-amphiphiles selected from at least two different groups (a) to (d):
 - (a) one long chain alcohol(s) being C_6 - to C_{40} - alcohol(s);
 - (b) long chain acid(s) being C_6 - to C_{24} - carboxylic acid(s);
 - (c) ester(s)/partial ester(s) of a polyol with one or more mono- or polycarboxylic acid(s) selected from the group consisting of:
 - a sorbitan (C_6 - to C_{22} -) ester,
 - a methylglucoside (C_6 - to C_{22} -) ester,
 - a sugar (C_6 - to C_{22} -) ester,
 - a mono-, di-, and triglyceride of a C_6 - to C_{22} - carboxylic acid,

Appl. No.: 10/798,164

Amendment Dated: April 30, 2007

Reply to Office Action of November 29, 2006

- a lactic acid or citric acid esterified derivative of a mono- or di-glyceride of a C₆- to C₂₂-carboxylic acid,
- a polyglycerol (C₆- to C₂₂-) ester, and
- a vitamin ester;

and

- (d) - salicylic acid
- benzoic acid
- lecithin